

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A communication network including a plurality of nodes and a plurality of link groups connecting these nodes, wherein said nodes include:

a first node type having a switch for switching a plurality of paths having a predetermined bandwidth, hereafter, referred to as a low order paths; and

a second node type having a switch for switching said low order path, a switch for switching [[a]] at least one path having a bandwidth larger than said predetermined bandwidth, hereafter, referred to as a high order path, multiplexing means of multiplexing N, N is an integer of two or more, of said low order paths on one of said high order paths, and separating means of separating one of said high order paths into N of said low order paths, and

said low order paths are [[is]] set between any two of said first node types and said high order paths are [[is]] set between any two of said second node types.

2. (Canceled)

3. (Previously Presented) The communication network according to claim 1, wherein a centralized control unit capable of communication with all said nodes and having a path table recording route information on all said existing low order paths is provided, and said centralized control unit is set actively by said low order path and said high order path.

4. (Original) The communication network according to claim 1, wherein every said node has a node control unit having a path table recording route information on all the low order paths passing that node, and said low order path and said high order path are set actively by said node control unit.

5. (Currently Amended) The communication network according to claim 1, wherein at least one of said low order paths is a wavelength path and at least one of said high order paths is a wavelength group path.

6. (Currently Amended) The communication network according to claim 1, wherein at least one of said low order paths is a wavelength path and at least one of said high order paths is an optical fiber path.

7. (Currently Amended) The communication network according to claim 1, wherein at least one of said low order paths is a wavelength group path and at least one of said high order paths is an optical fiber path.

8. (Currently Amended) A path setting method in a communication network including:

a first node type having a switch for switching paths having a predetermined bandwidth, hereafter, referred to as a low order paths;

said node type having a switch for switching said low order paths, a switch for switching paths having a bandwidth larger than said predetermined bandwidth, hereafter, referred to as a high order paths, multiplexing means of multiplexing N, N is an integer of two or more, of said low order paths on one of said high order paths, and separating means of separating one of said high order paths into said N of low order paths; and

a plurality of link groups connecting said [[these]] nodes, wherein:

in the case where said N, N is an integer of two or more, low order paths having a route including a section connecting any two of said high order paths, the high order path on which the N of said low order paths are multiplexed is determined through ~~set-in~~ said section.

9. (Currently Amended) A path setting method in a communication network includes [[including]]:

a first node type having a switch for switching a paths having a predetermined bandwidth, hereafter, referred to as a low order paths;

a second node type having a switch for switching said low order paths, a switch for switching [[a]] paths having a bandwidth larger than said predetermined bandwidth, hereafter, referred to as a high order paths, multiplexing means of multiplexing N , N is an integer of two or more, of said low order paths on one of said high order paths, and separating means of separating one of said high order paths into said N of low order paths; and

a plurality of link groups connecting nodes of the first type sent, wherein:

on a route of a first low order path having any two of said first node or said second node as its starting point node and endpoint node, attention is paid to a section that is a part of said route in predetermined order, and if the second to N -th, N is an integer of two or more, low order paths of which route including said section, the high order path on which the first to N -th low order paths are multiplexed is determined through said section.

10. (Currently Amended) The path setting method according to claim 9, wherein, if length of the route of said first low order path is L , L is an integer, attention is paid first to a section that is entirety of said route, and then to all the sections of which length is $L-1$, and thereafter to all the sections of which length is $L-2$, $L-3$, ..., [[L-2]] L=2 in order.

11. (Currently Amended) The path setting method according to claim 9, wherein, if length of the route of said first low order path is L , attention is paid first to the sections having as one terminal point a starting point node of said first low order path of which length is L , $L-1$, $L-2$, ..., L=2, and then to the sections having as one terminal point the node on an endpoint node side by 1 hops from said starting point node of which length is $L-1$, $L-2$, $L-3$, ..., L=2, and thereafter to the sections having as one terminal

point the node on the endpoint node side by l hops from said starting point node of which length is $L-l$, $L-l-1$, $L-l-2$, ..., $L=2$ in order of $l = 2, 3, 4 \dots, [[L-2]] \underline{L=2}$.

12. (Currently Amended) A node apparatus in a communication network having a plurality of low order paths and a plurality of high order paths, including:

a switch for switching a path having a predetermined bandwidth, hereafter, referred to as [[a]] said low order path;

a switch for switching a path having a bandwidth larger than said predetermined bandwidth, hereafter, referred to as a high order path;

~~multiplexing means of multiplexing N , N is an integer of two or more, (N is an integer of 2 or more)~~ of said low order paths on one of said high order paths;

separating means of separating one of said high order paths into N of said low order paths; and

node controlling means having a path table recording route information on all the low order paths passing that node, and wherein:

said low order path and said high order path are set by said node controlling means.